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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/512,086

11/08/2004

Georg Rudolf Sillner

A-9311

7909

7590

03/22/2007

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EXAMINER

LUPINO, GINA M

ART UNIT

PAPER NUMBER

3652

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/512,086	Applicant(s) SILLNER, GEORG RUDOLF	
	Examiner Gina M. Lupino	Art Unit 3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-78 is/are pending in the application.
- 4a) Of the above claim(s) 1-51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 52-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

I. Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because:
 - 1.1. They fail to show features as described in the specification.
 - 1.2. They must show every feature of the invention specified in the claims. Therefore, the following features must be shown or canceled from the claims:
 - 1.2(a) First carrier, second carrier, needles, and pins
 - 1.3. No new matter should be entered. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).
2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

II. Claim Rejections - 35 USC § 112

The following is a quotation from the relevant paragraphs of 35 U.S.C. 112:

- (2) The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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1. Claims 54, 56, and 71 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1.1. Claim 54 recites the limitation, "vacuum holders are lamellar-shaped and adjoining vacuum holders".

1.1(a) However it is unclear how a vacuum holder may, itself, be shaped like a "thin plate".

See "lamellar" and "lamellae." Dictionary.com Unabridged (v 1.1). Random House, Inc.
16 Mar. 2007.

1.1(b) Also, this limitation is indefinite because it is unclear whether the vacuum holders are "adjoining vacuum holders", composed of "adjoining vacuum holders", or simply, "adjoined".

1.1(c) Thus, the term "lamellar-shaped" is unclear and renders claim 3 indefinite. Further clarification is necessary.

1.2. Claim 56 recites the limitation "an extruded housing", however the term "extruded" is unclear and renders this claim indefinite.

1.3. Claim 71 recites the limitation, "the pick-up element has a pick-up head with a plurality of lamellar-shaped and adjoining vacuum holders". However, it is unclear how a vacuum holder may, itself, be lamellar, as discussed above. Thus, the term "lamellar-shaped" is unclear and renders claim 3 indefinite. Further clarification is necessary.

III. Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the

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prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 52-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over ACELLO (U.S. Patent No. 6,283,693) in view of SUZUKI (U.S. Patent Publication No. 2003/0049110).

1.1. With respect to claims 52 and 53, ACELLO teaches a device for processing electrical components held on a first carrier formed by a carrier foil 28 in an array forming rows 44, 48, where some rows contain at least two components that are each picked up by at least one pick-up element 60 from the carrier foil and placed on a second carrier and in each work stroke, a group of the components is picked up from the carrier foil with the pick-up element and placed on the second carrier, and

1.2. With respect to claim 52,

1.2(a) the pick-up element has a pick-up head with vacuum holders, and

1.2(b) a plurality of needles or pins, provided for releasing the electrical components from the carrier foil, can be moved axially and in succession with the first axis direction from a starting position distanced from the side of the carrier foil facing away from the components against this side of the carrier foil, so that by means of the needle or pin, an electrical component is released from the carrier foil and moved away from the carrier foil together with the vacuum holder holding this component.

1.2(c) See Figures 1, 2, 4.

1.3. With respect to claims 54-76 ACELLO teaches the device discussed above, and

1.3(a) With respect to claim 54, the vacuum holders are formed of lamellar-shaped members and adjoining vacuum holders.

1.3(b) With respect to claim 55, where at least two components are semiconductor chips and the array of components on the foil is capable of being a semiconductor wafer

separated into the semiconductor chips. See Abstract, line 1, and column 5, lines 15-18.

1.3(c) With respect to claim 56, where the components are electrical components, preferably semiconductor components provided with an extruded housing.

1.3(d) With respect to claim 57, where the components are placed on the second carrier to form at least one row on the carrier, in which the components adjoin each other in a first axis direction.

1.3(e) With respect to claims 58-60, the first rows on the carrier foil:

1.3(e)(i) With respect to claim 58, are each oriented in a common axis direction.

1.3(e)(ii) With respect to claim 59, have different lengths.

1.3(e)(iii) With respect to claim 60, partially display varying distances from their beginning and end from a reference line that is common to all first rows and extends perpendicular to the longitudinal extension of these rows.

1.3(e)(iv) See Figures 4-5, 8.

1.3(f) With respect to claims 61-64, where an electric control unit controls a pick-up head to move the components from the first to the second carriers. See column 5, lines 7-8, 15-19.

1.3(g) With respect to claim 65, further comprising a drive for the carrier foil in extending perpendicular to the longitudinal extension of the first rows. See Figure 6.

1.3(h) With respect to claim 66, the pick-up element is movable in a direction crosswise to the extension of the second rows. See Figures 1, 2, 4.

1.3(i) With respect to claim 67, further comprising a pick-up element, which comprises at least two fixtures in one row for one component each.

1.3(j) With respect to claim 68, further comprising a pick-up element, which comprises at least two rows with at least two fixtures each for one component each.

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- 1.3(k) With respect to claim 69, where the fixtures are formed by bearing surfaces 62a of a multiple vacuum holder.
- 1.3(l) With respect to claim 70, further comprising a pick-up element with at least one pick-up head made as a multiple vacuum holder.
- 1.3(m) With respect to claim 71, where the pick-up element has a pick-up head with a plurality adjoining vacuum holders, which can be moved in a housing in one axis direction.
- 1.3(n) With respect to claim 72, further comprising means for releasing the at least two components from the carrier foil. See Figures 2, 6, 7.
- 1.3(o) With respect to claim 73, the means for releasing are needles or rams, with which the components are released from the foil and secured on the pick-up element during the release.
- 1.3(p) With respect to claim 74, the release of the components in each group of components from the carrier foil takes place in temporal succession.
- 1.3(q) With respect to claim 75, where the second carrier is formed by the transport surface of a transport element.
- 1.3(r) With respect to claim 76, further comprising a ram element, in which several rams or pins in a housing are axially movable by a control unit from a non-effective starting position into a position releasing the components from the carrier foil. See Figures 2, 5, 6.
- 1.4. However, ACELLO fails to teach, with respect to claims 52, 66, and 71, the pick-up head is moveable vertically, or in a direction perpendicular to the carrier foil.
- 1.5. SUZUKI teaches:
- 1.5(a) A pick-up head that can be guided in a first axis direction perpendicular to a carrier foil. See Figures 3-6. Therefore, it would have been obvious to one of ordinary skill in

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the art to modify ACELLO with the vertically adjustable pick-up head of SUZUKI in order to facilitate picking up a component and moving it from one carrier to another.

1.5(b) The components on the foil are released by puncturing the carrier foil from the side of the foil facing away from the components. Therefore, it would have been obvious to one of ordinary skill in the art to modify ACELLO with the ram and foil assembly of SUZUKI in order to facilitate releasing the components from the foil.

2. Claim 77 is rejected under 35 U.S.C. 103(a) as being unpatentable over ACELLO (U.S. Patent No. 6,283,693) in view of SUZUKI (U.S. Patent Publication No. 2003/0049110) and JORSS (U.S. Patent No. 4,529,469).

2.1. With respect to claim 77, ACELLO teaches the device discussed above, with push rams and a control means, but fails to teach the control means have control cams. JORSS teaches a cam 58 that controls and pushes a push rod 53. Therefore, it would have been obvious to one of ordinary skill in the art to modify the push ram and control unit of ACELLO with a control cam, as in JORSS, in order to control the timing of the push rams' upward movement.

3. Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over ACELLO (U.S. Patent No. 6,283,693) in view of SUZUKI (U.S. Patent Publication No. 2003/0049110) and SINGH (U.S. Patent No. 6,364,089).

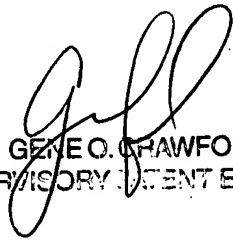
3.1. With respect to claim 78, ACELLO teaches the device discussed above where the components are picked up and fed to a further processing unit, but fails to teach the components are picked up by means of a flipping station in the second carrier. SINGH teaches a device that handles semiconductor chips that has a flipping station that transfers the chips from one station to another. See Abstract and Figure 2. Therefore, it would have been obvious to one of ordinary skill in the art to modify ACELLO with the

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flipping station of SINGH in order to facilitate transferring the chips to another processing unit or transport element.

IV. Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gina M. Lupino whose telephone number is (571) 272-6557. The examiner can normally be reached on 9:00am - 5:00pm EST.
3. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene O. Crawford can be reached on (571) 272-6911. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.
4. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).
5. GML


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